

Acknowledgements

Many persons gave their help and their friendship to me during the execution of this work in Ethiopia and in Italy. They are listed here in alphabetical order: Dr John Ash, Mr John Atkins, Ato Yilma Dellelegn, Prof. Mauro Fasola, Ato Amare Kifle, Dr Yalemteyeh Mekonnen, Ato Tilaye Nigussie, Shemseddi Nuri, Mr Giampiero Pagani, Prof. Anacleto Sabbadin, Mr Per Ole Syvertsen, Ato Abebe Takwa, Ato Akale Yemane, Ato Melaku Zendu. The research was supported by a grant from the Bird Exploration Fund, and received assistance from the Ethiopian Natural History and Wildlife Society and the Instituto Italiano di Cultura of Addis Ababa.

References:

- Ash, J. S. & Gullick, T. M. 1989. The present situation regarding the endemic breeding birds of Ethiopia. *Scopus* 13: 90–96.
- Benson, C. W. 1942. A new species and ten new races from southern Abyssinia. *Bull. Brit. Orn. Cl.* 63: 8–19.
- Benson, C. W. 1945. Notes on the birds of southern Abyssinia. *Ibis* 87: 489–509.
- Collar, N., Crosby, M. J. & Stattersfield, A. J. 1994. *Birds to Watch 2. The World List of Threatened Birds*. BirdLife Conservation Series no. 4. ICBP, Cambridge.
- Collar, N. & Stuart, S. 1985. *Threatened Birds of Africa and Related Islands. The ICBP/IUCN Red Data Book Part 1*. 3rd edn. ICBP/IUCN, Cambridge.
- Dellelegn, Y. 1991. Prince Ruspoli's Turaco. *Walia* 13: 29–35.
- Dillingham, I. H. & Moreau, R. E. 1961. Musophagidae in northwestern Tanganyika territory. *Ibis* 103: 294–295.
- Erard, C. & Prévost, J. 1970. New facts on the distribution of *Tauraco ruspolii* Salvadori. *Bull. Brit. Orn. Cl.* 90: 157.
- Fry, C. H., Keith, S. & Urban, E. K. 1988. *The Birds of Africa*. Vol. 3. Academic Press.
- Moreau, R. E. 1958. Some aspects of the Musophagidae. *Ibis* 100: 67–112.
- Urban, E. K. & Brown, L. H. 1971. *A Checklist of the Birds of Ethiopia*. Addis Ababa Univ. Press, Addis Ababa.

Address: L. Borghesio, C. Re Umberto 42, 10128 Torino, Italy.

© British Ornithologists' Club 1997

Further observations on the nesting of the Azure-rumped Tanager

by Héctor Gómez de Silva Garza

Received 15 April 1995

This paper describes observations on a nest of the Azure-rumped Tanager *Tangara cabanisi* in the El Triunfo Biosphere Reserve, southeastern Chiapas, Mexico. The nest was discovered by Angie Tyner on 26 April 1993, while the birds were still building it, and from 1 to 17 May the author was able to make occasional visits while conducting observations on the natural history of the Horned Guan *Oreophasis derbianus* and censusing the birds in the upper montane forest of El Triunfo.

TABLE 1

Data on nest sites of *Tangara cabanisi*; measurements in metres. All nests were at a point where the branch forked

	Height of tree	Height of nest	Distance from edge of crown	Distance to trunk	Branch
Data from Long & Heath (1994)	15.4–36.1	9.7–32.5	0.5–2	3–14	horizontal
1993 nest	c. 25	15.5	1.5–2	c. 4	horizontal

The Azure-rumped Tanager is a little known species with an extremely small range (Collar *et al.* 1992). Long & Heath (1994) presented the most detailed account of the breeding biology of this species, including data from 9 nests discovered between 1983 and 1990. They concluded that Azure-rumped Tanagers breed between mid-April and mid-June, nest in trees over 15 m tall with "a wide canopy of spreading branches", and place their nests "in the top half of the tree, some distance from the main trunk, approaching the end of a long-horizontal branch, at a point where the branch forked."

Not surprisingly, the 1993 nest fits this description well (Table 1). A noteworthy difference, however, is that the nest was not in the "humid evergreen broadleaf forest" that is the tanagers' typical habitat (and where all of Long & Heath's nests were found), but in a pine tree in the adjacent "*Cupressus-Pinus* community" at higher elevations (habitats as described in Long & Heath 1991). Heath & Long (1991: 227) reported that they occasionally saw the tanager up to 1700 m above sea level, where some plant species from the humid evergreen broadleaf forest follow the river valleys up into the lower slopes of the conifer belt. The 1993 nest was very near such a valley, and indeed the incubating bird nearly always flew toward the valley to forage, but it is significant that the bird searched for similar characteristics for a nest site even within vegetation of very different structure and composition from its typical habitat. This suggests that the choice of the above-mentioned nest-site characteristics may be a fixed "species-specific" pattern.

The average duration of incubation recesses (8.00 min, s.d. 4.12, $n=45$) was slightly higher than the averages for two nests (6.7, s.d. 3.4; 5.7, s.d. 3.2) reported in Long & Heath (1994). This is not surprising, since the 1993 nest was not surrounded on all sides by the proper habitat and the birds would have been expected to require longer periods of time to find enough of the fruits which form the main part of their diet.

Long & Heath (1994) reported that the incubation period is "around 14 days". It is typically 13–14 days in the genus *Tangara* (Isler & Isler 1987). Unfortunately, the bird may have already been incubating for one or more days by the time that my observations of the 1993 nest began, but the young had not yet hatched by 13.00 hr on the 15th day of observation; they had already hatched by 13.00 hr of day 16. The

incubation period, therefore, was at least 15 days. Long & Heath (1994) report that the incubation constancies for two nests observed were 73.9 and 81.7%, calculated using the formula of Skutch (1976). From my data, I calculated a constancy of 67.4%. The range falls within the 60–80% of daylight hours reported for most tanagers (Skutch 1989) but is lower than that recorded in the previous Azure-rumped Tanager nests, probably owing to the longer average duration of recesses. It is important to note that it was necessary to modify Skutch's formula for calculating incubation constancy owing to the different number of incubation recesses and sessions observed in full (45 and 35); the average duration was used instead of the sums of all recesses and sessions. This calculation includes very brief recesses of 3 min (when a *Cathartes* vulture soared low overhead), 1 min (in order to catch an insect in flight) and a few seconds (in order to chase a pair of Blue-hooded Euphonias *Euphonia elegantissima* which began to build their nest in an adjacent tree).

Eggs of the genus *Tangara* are usually "whitish (sometimes tinged with colour), and speckled brown or lavender, especially about the large end" (Isler & Isler 1987). The eggs of the Azure-rumped Tanager were previously unknown, but in the 1993 nest could be seen to be whitish, with a very pale pink wash and heavy red-brown speckling.

Acknowledgements

These observations were carried out while conducting research with Fernando González-García for the Instituto de Ecología. Angie Tyner discovered the nest and kindly told me of its location; Al DeMartini, Alain Huc and Leobardo Pérez helped while I watched the nest. I would also like to thank for their companionship Marco Tulio Argueta, Ismael Gálvez, Laura Noble, Rafael Solís, Sofía Solórzano and the Watts family.

References:

- Collar, N. J., Gonzaga, L. P., Krabbe, N., Madroño Nieto, A., Naranjo, L. G., Parker, T. A. III & Wege, D. C. 1992. *Threatened Birds of the Americas: the ICBP/IUCN Red Data Book*. International Council for Bird Preservation. Cambridge, U.K.
- Heath, M. & Long, A. 1991. Habitat, distribution and status of the Azure-rumped Tanager *Tangara cabanisi* in Mexico. *Bird Conservation International* 1: 223–254.
- Isler, M. L. & Isler, P. R. 1987. *The Tanagers: natural history, distribution and identification*. Smithsonian Institution Press.
- Long, A. & Heath, M. 1991. Flora of the El Triunfo Biosphere Reserve, Chiapas, Mexico: a preliminary floristic inventory and the plant communities of Polygon I. *Anal. Instit. Biol. UNAM, México*, Ser. Bot. 62(2): 133–172.
- Long, A. & Heath, M. 1994. Nesting ecology and helping behavior in the Azure-rumped Tanager in Mexico. *Condor* 96: 1095–1099.
- Skutch, A. F. 1976. *Parent Birds and Their Young*. Univ. Texas Press.
- Skutch, A. F. 1989. *Life of the Tanager*. Cornell Univ. Press.

Address: Héctor Gómez de Silva G., Centro de Ecología, UNAM, Apartado Postal 70-275, C.P. 04510 Ciudad Universitaria, México, D.F., México.